

Appl. No.: 10/602,586  
Amendment Dated December 22, 2005  
Reply to Office Action of June 27, 2005

40-90 minutes. The nonwoven fabric substrate must meet specified thickness requirements, as well as tensile strength and elongation requirements.

The background portion of Applicant's specification traces the development of fabric softener dryer sheets as described in United States Patent Nos. 5,470,492, 5,883,069 (which is the primary reference relied upon by the Examiner), and 5,929,026. As taught in U.S. Patent No. 5,470,492, the nonwoven fabric substrate must have a basis weight of 0.52-0.58 oz/yd<sup>2</sup>, most preferably 0.54-0.56 oz/yd<sup>2</sup>. As taught in U.S. Patent No. 5,883,069, the thickness of the fabric substrate and its void volume and loft are increased, and the basis weight of the fabric is increased somewhat to about 0.53-0.59 oz/yd<sup>2</sup>.

In accordance with the present invention, the inventors have radically decreased the basis weight of the nonwoven fabric substrate and yet have maintained all of the required performance criteria for a dryer sheet substrate, including thickness, tensile strength and, importantly, the fabric's retention and release characteristics with respect to the fabric softener composition that is coated and impregnated into the substrate. Achieving these demanding requirements is a significant accomplishment, and is not obvious from the cited prior art.

The Examiner has rejected the claims as being obvious over Childs et al. U.S. Patent No. 5,883,069 in view of Willis et al. U.S. Published Patent Application No. 2003/0119403. As recognized by the Examiner, the Childs et al. reference teaches a nonwoven fabric substrate having a significantly higher basis weight than that claimed by Applicant. However, the Examiner contends that it would have been obvious to optimize the basis weight and tensile strength based on desired end use. Applicant submits that this rejection is improper and should be withdrawn.

In order for it to have been obvious to reduce the basis weight and yet maintain all of the requisite performance characteristics of a dryer substrate, it must be shown that the person of ordinary skill in the art would know how to achieve such results. In particular, the prior art relied upon in the rejection does not enable a person of ordinary skill in the art to know how to drop the basis weight of the fabric and yet maintain the thickness and softener composition retention and release properties. Thickness is very important in dryer substrates. The fabric must be open enough to receive the coating and the coating must go down into the interior of the

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fabric and to bridge between the fibers. The Childs reference does not teach how to achieve this reduction in basis weight and moreover, clearly teaches away from the present invention explicitly by calling for a much higher basis weight fabric.

The inventors have discovered a way to control and to increase the thickness of the nonwoven fabric substrate. By reducing the steam pressure in the steam consolidator of the spunbond manufacturing line, the reduction in temperature gave an increase in thickness to the fabric. This discovery was made by tracking the consolidator temperature over a period of several days and correlating this to fabric thickness, maintaining other manufacturing parameters constant. Now, with the ability to control and to increase the thickness of the fabric, it was possible for the inventors to attain the same thickness as earlier products by running the collection belt of the spunbond line faster. This also resulted in a reduction in the basis weight of the fabric. Tests carried out of the resulting fabric surprisingly showed that the resulting fabric has fabric softener release properties essentially identical to the prior heavier basis weight fabrics. It was not at all evident or obvious to the inventors that the thickness of the nonwoven fabric substrate could be increased in this manner. Nor was it evident or obvious to the inventors that it would be possible to achieve such a significant reduction in basis weight while maintaining the thickness and strength properties of the fabric. However, what the inventors found amazing was that these changes to the fabric did not result in a sacrifice of its performance properties as a dryer sheet substrate. As shown in Figure 1 and the accompanying examples, the reduced basis weight substrate had release properties nearly identical to the earlier heavier basis weight fabrics. This was truly counter-intuitive.

As the standard for assessing obviousness, MPEP 706.02(j) lists the requirements for establishing a *prima facie* case of obviousness under 35 U.S.C. § 103: First, there must be some suggestion or motivation, either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings to arrive at the claimed invention. Second, there must be a reasonable expectation of success. The teaching or suggestion to make the combination of references and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. Finally, the prior art references must teach or suggest all of the claim limitations. It is respectfully submitted that

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these requirements have not been met and, therefore, a *prima facie* case of obviousness has not been established.

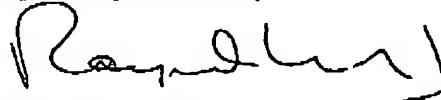
As recognized by the Examiner, the Childs et al. reference does not teach all of the claim limitations. The Childs et al. reference teaches that the basis weight should be considerably higher than that set forth in the claims. Nor does the Childs et al. reference provide any motivation to reduce the basis weight of the fabric. In fact, it specifically teaches otherwise – a much higher range of basis weights. Finally, there is no reasonable expectation of success. Considering the teachings of the Childs et al. patent, the person of ordinary skill would recognize the criticality of the combination of physical properties, including basis weight, prescribed in detail by Childs et al. for achieving acceptable performance as a dryer sheet substrate. These specific teachings therefore do not impart the expectation of success required for an obviousness rejection, but just the opposite! Accordingly, the Examiner has failed to establish a *prime facie* case of obviousness and the rejection should be withdrawn.

With respect to the Willis et al. published application, Applicant submits herewith a Declaration under 37 CFR § 1.131 establishing an invention date prior to the November 30, 2001 priority date of the Willis et al. publication.

In view of the foregoing, Applicant submits that this application is in condition for allowance with Claims 1-8 as originally presented.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



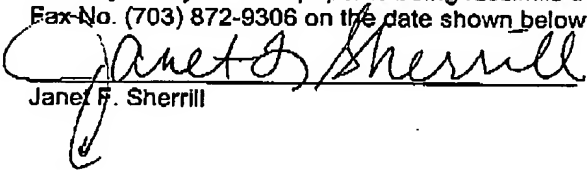
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Janet F. Sherrill

December 22, 2005  
Date